
11. DRAINAGE AND WATER QUALITY

This chapter describes (1) existing drainage and water quality characteristics within the proposed project area, (2) the potential impacts of anticipated project-facilitated development and improvement activities on these conditions, and (3) any measures necessary to mitigate identified significant impacts.¹

11.1 SETTING

11.1.1 Areawide Drainage and Hydrology

The Downtown Improvement Program project area is located within the northern Santa Clara Valley Watershed and drains into San Francisco Bay, approximately five miles north of the project area. Overall drainage patterns in Santa Clara County are separated at an alluvial divide near Morgan Hill, approximately 30 miles southeast of the project area. Areas north of the divide drain northward to San Francisco Bay, while southern areas drain southward to Monterey Bay through the Pajaro River. Surface drainage along the northern valley floor consists of developed urban storm drains with highly modified stream channels. Major rivers of the Santa Clara Valley Watershed include the Guadalupe River, Coyote Creek, Saratoga Creek, Calabazas Creek, and Stevens Creek. The project area is located approximately 1.5 miles east of Stevens Creek and 2.5 miles west of Calabazas Creek.²

Precipitation in Sunnyvale drains either to Stevens Creek in the southwest portion of the city, Calabazas Creek in the east, or to one of three constructed channels (flood control lines) in the interior of the city. The three flood channels (Sunnyvale East and West Channels and the El Camino Channel) were constructed to accommodate increased runoff from the increasing impervious surfaces within the city limits and in order to decrease the potential for flooding and property damage. The City owns and operates approximately 4,270 storm drain inlets,³ two

¹The "Setting" and portions of "Pertinent Plans and Policies" are derived from chapter III.4 (Water Quality and Hydrology) of the Olson Cherry Orchard Mixed-Use Project Final Environmental Impact Report, prepared for the City of Sunnyvale by ESA, May 1999. Statistics have been verified or, as necessary, revised by Wagstaff and Associates.

²Ibid., p. III.4-1.

³Jim Craig, Field Services Superintendent, City of Sunnyvale Department of Public Works, written communication, March 18, 2003.

pump stations, and 150 miles of storm drains. The flood channels and creeks within the city limits (Stevens Creek, Calabazas Creek, the Sunnyvale East and West Channels, and the El Camino Channel) are owned and maintained by the Santa Clara Valley Water District (SCVWD). Most of the flood control drainages are designed for 10-year storm occurrences.¹

11.1.2 South San Francisco Bay

South San Francisco Bay (south of the Dumbarton Bridge) is characterized by shallow depths, limited freshwater inflow, and slow currents, which create increased potential for environmental impacts from natural and human activities. The South Bay receives all water runoff from the northern Santa Clara Valley Watershed, which is bounded by the Diablo Mountains to the east, the Santa Cruz Mountains to the south and west, and Coyote Reservoir to the south. All the land in the watershed drains to storm drains, creeks, and rivers, which, in turn, flow to the Bay. Fresh water also comes from the three South Bay wastewater treatment plants in Palo Alto, Sunnyvale, and San Jose. The watershed's edge is lined with sloughs, salt ponds, and salt and brackish marshes that lead up to creekside woodland habitat above the basin floor.²

Due to its unique physical characteristics and location adjacent to a major urban area, the South Bay faces continual water pollution. Government regulations and pollution prevention programs have been instrumental in reducing the flow of pollutants from areas within its watershed. In the past, most of these measures were aimed at wastewater treatment facilities and major industries. However, it is currently recognized that urban and rural sources play a major role in contributing to pollutants entering creeks and the Bay.³

Nonpoint (i.e., decentralized) source pollution is considered the major contributor to the mass loading of pollutants into the South Bay. Pollution from nonpoint sources has been more difficult to manage than point source pollution. Nonpoint sources include pollutants entrained in surface runoff from streets, parking lots, landscaping, and other urban areas where the runoff proceeds directly to storm drains. This polluted runoff is not treated and flows through the storm drain directly into the Bay. Typical for urban areas, nonpoint source pollution is likely to come from fairly common sources, including sediment, trash and debris, metals, salts, hydrocarbons, volatile organic compounds, grease and oils, bacteria, fecal coliform, herbicides and pesticides, and fertilizers.⁴

To address all sources of pollution that threaten the Bay, and to protect water quality throughout Santa Clara Basin watersheds, the Watershed Management Initiative (WMI) was

¹Olson Cherry Orchard FEIR, p. III.4-1.

²Ibid., p. III.4-2.

³Ibid.

⁴Ibid.

initiated in 1996 by the U.S. Environmental Protection Agency, the State Water Resources Control Board, and the San Francisco Bay Regional Water Quality Control Board (RWQCB). A major aim of WMI is to coordinate existing regulatory activities on a basinwide scale, ensuring that problems are addressed efficiently and cost effectively.¹

11.1.3 Areawide Water Quality

Surface runoff from Sunnyvale generally discharges to channels maintained by the SCVWD that subsequently discharge to San Francisco Bay. South San Francisco Bay is included on the list of impaired waters in the State of California for pesticides Chlordane, DDT, Diazinon, and Dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium.² Nonpoint sources of pollution, mostly from urbanized areas, contribute significant amounts of chromium, copper, lead, nickel, zinc, and suspended solids to San Francisco Bay. Historical data show that numerous water quality, sediment quality, and trace organic contaminants in bivalve (e.g., clams and mussels) tissue have been exceeded in the San Francisco Bay.³

11.1.4 Beneficial Uses

The San Francisco Bay Area RWQCB designates beneficial uses for significant water resources in its regulatory region (see the "Pertinent Plans and Policies" section below for additional information on the RWQCB). Beneficial uses of surface and groundwater serve as a basis for establishing water quality objectives and discharge prohibitions. Table 11.1 presents existing and potential beneficial uses of the South San Francisco Bay, as designated by the RWQCB in the current (1995) *Water Quality Control Plan (Basin Plan)*.⁴

The project area is not located next to a contributing natural channel to San Francisco Bay, but it is hydrologically connected to the Bay through the local storm drain system. Surface runoff from the project area flows through the City municipal storm drain system into San Francisco Bay in what is considered part of the South Bay Basin.⁵

¹Ibid.

²City of Redwood City. Draft Environmental Impact Report for the Marina Shores Village Project. Prepared by Wagstaff and Associates, February 2003, p. 9-16.

³Olson Cherry Orchard FEIR, p. III.4-3.

⁴Ibid.

⁵Ibid.

Table 11.1

SAN FRANCISCO BAY BASIN PLAN IDENTIFIED "BENEFICIAL USES" FOR SOUTH SAN FRANCISCO BAY

Existing Beneficial Uses:

- Estuarine Habitat
- Fish Migration
- Industrial Service Supply
- Navigation
- Ocean, Commercial, and Sport Fishing
- Preservation of Rare and Endangered Species
- Shellfish Harvesting
- Water Contact Recreation
- Water Non-Contact Recreation
- Wildlife Habitat

Potential Beneficial Use:

- Fish Spawning

Categories of Beneficial Use Not Identified for South San Francisco Bay:

- Agricultural Supply
- Cold Freshwater Habitat
- Freshwater Replenishment
- Industrial Process Supply
- Marine Habitat
- Municipal and Domestic Supply
- Warm Freshwater Habitat

SOURCE: RWQCB, 1995 Basin Plan.

11.1.5 Groundwater Quality and Groundwater Related Issues

Sunnyvale lies above the Santa Clara Valley groundwater basin (DWR Basin No. 2-9B), which covers approximately 240 square miles, has a range of depth to water from 10 to 1,010 feet, a storage capacity of 3.0 million acre-feet, and a sustainable perennial yield of 100,000 acre-feet. This aquifer is used as an important source of municipal and domestic water, industrial process water, industrial service water, and agricultural water supply.¹

The Santa Clara Valley groundwater basin is comprised of multiple sub-aquifers existing both horizontally and vertically in the geologic formation. These aquifers are slowly becoming contaminated. Most drinking water is now pumped from depths of greater than 200 feet in the north valley to avoid polluted groundwater in upper aquifers. The Santa Clara County 1994 General Plan lists the following causes of groundwater contamination:

- Agricultural practices, as well as over-concentration of septic systems;
- Waste disposal sites, including both sewage and solid wastes;
- Industrial land uses near creeks with high percolation capacity;
- Naturally occurring mercury;
- Herbicide and pesticide use;
- Recharge of aquifers with high salt content water; and
- Overdraft of the north valley groundwater, which has increased saltwater intrusion.²

Urban uses in the project area that contribute contaminants to storm runoff also contaminate groundwater wherever water on the ground surface percolates into the groundwater system.³

Subsidence is another effect of overdraft in Santa Clara County. Subsidence occurs when groundwater is withdrawn at a rate faster than it is recharged (overdraft) and the aquifer sediments density (subsidence). Due to excessive groundwater pumping for irrigated agriculture, and subsequently for urban and industrial development, some areas of Santa Clara County have subsided up to 14 feet. Within Sunnyvale, ground subsidence totaled approximately six to eight feet throughout the city from 1934 to 1967. The highest levels of subsidence that occurred earlier this century have been halted by a system of reservoirs and

¹Ibid.

²Ibid., pp. III.4-3 and 5.

³Ibid., p. III.4-6.

groundwater recharge facilities that the SCVWD operates. Groundwater levels have recovered primarily due to the availability of surface water imports to Santa Clara County for direct use and recharge of aquifers.¹

Historic groundwater level data indicates that the water table in Santa Clara County can fluctuate from year to year by 60 feet in some areas. The direction of regional groundwater flow is to the north-northeast toward San Francisco Bay. High groundwater tables can lead to water damage to below-grade structures and result in contaminant spreading where excavation and subsequent pumping is required.²

11.1.6 Local Drainage and Hydrology

The topography in Sunnyvale slopes generally to the northeast, with elevations ranging from sea level to approximately 290 feet. The project area is generally flat and highly urbanized with buildings, pavement, and roadways. The project area is serviced by a storm drainage system that includes 12- to 33-inch-diameter lines.³ The existing storm drain inlets in the City were designed to accommodate flows from the 10-year frequency storm, which is the design standard for Sunnyvale. The City attempts to maintain and operate the storm drainage system so that surface runoff is drained from 95 percent of the streets within one hour after a storm event.⁴

According to the flood mapping of the Federal Emergency Management Agency (FEMA) (Flood Insurance Rate Map, Community Panel Number 060352-0001-D, Panels 1 and 2, August 23, 1998), the CalTrain tracks, which form the northern border of the project area, are within a 100-year flood area; however, no housing or structures are proposed for this location. No other portion of the project area is located in a 100-year flood area.

11.1.7 Local Water Quality

Urban uses in the project area are assumed to contribute suspended sediments, trace metals, chemical pollutants (pesticides), oil and grease, and other debris to the surface runoff (nonpoint source pollution) collected by storm drains. Pollutant levels in storm runoff are typically highest in the early part of the hydrologic year (autumn), especially during the first major rainfall event after the dry season, then generally decrease with successive storm flows. Water quality monitoring of surface runoff for the City storm drain system was initiated in 1988.

¹Ibid., p. III.4-5.

²Ibid., p. III.4-6.

³Craig.

⁴Olson Cherry Orchard FEIR, p. III.4-5.

Since monitoring began, surface runoff from the City has exceeded water quality objectives for total copper, lead, and zinc.¹

11.2 PERTINENT PLANS AND POLICIES

11.2.1 Sunnyvale Plans and Policies

The City of Sunnyvale General Plan Environmental Management Element, Surface Runoff Sub-Element (adopted 1993 and referenced below from the General Plan Executive Summary) contains the following goal, policies, and action statements relevant to drainage and water quality in the project area:

- *Continue to support the identification and development of BMPs [Best Management Practices] suitable for use in the city through participation in the SCV NPS Control Program, American Public Works Association's Stormwater Quality Task Force, the Bay Area Stormwater Management Agencies Association, and similar organizations. [Policy 3.4A.1, p. (3.4)3]*
- *Comply with regulatory requirements and participate in processes which may result in modifications to regulatory requirements. [Policy 3.4A.2, p. (3.4)3]*
- *Ensure that BMPs are implemented to reduce the discharge of pollutants in storm water to the maximum extent practicable. [Policy 3.4A.3, p. (3.4)4]*
- *Modify new development and redevelopment permitting procedures to require developers and contractors to implement BMPs before, during, and after construction to minimize pollutants discharged in storm water runoff. The report titled "Storm Water Quality Controls for New Developments in Santa Clara Valley and Alameda County: A Guide for Controlling Post-Development Runoff" will be used as guidance to achieve post-development controls. [Action Statement 3.4A.3i, p. (3.4)4]*
- *Continue to participate with the SCV NPS Control Program to hold workshops to notify developers, consulting firms, and contractors of the General Construction Activity Storm Water Permit; to notify industries of industrial NPDES storm water permit requirements; and [to notify] everyone about the requirements of the City's areawide municipal storm water NPDES permit. [Action Statement 3.4A.3], p. (3.4)5]*
- *In addition to sweeping streets for aesthetic purposes, sweep to prevent pollutants from entering storm drain inlets. Similarly, in addition to cleaning storm drain inlets to prevent flooding, clean inlets to remove pollutants from the storm drain system. The "BMPs for*

¹Ibid., p. III.4-6.

Street Cleaning and Storm Drainage Facilities” developed by the Alameda County Urban Runoff Clean Water Program may be used as guidance. [Action Statement 3.4A.3m, p. (3.4)5]

- *Require developers and contractors to implement Association of Bay Area Governments (ABAG) soil erosion control measures. [Action Statement 3.4A.5a, p. (3.4)6]*
- *Maintain and operate the storm drain system so that storm waters are drained from 95 percent of the streets within one hour after a storm stops. [Policy 3.4B.1, p. (3.4)6]*
- *Continue to maintain the flood plain management practices outlined by the Federal Emergency Management Agency (FEMA) and the Army Corps of Engineers. [Action Statement 3.4C.2d, p. (3.4)7]*
- *Continue participation in the National Flood Insurance Program. [Action Statement 3.4C.2e, p. (3.4)7]*
- *Budget for and construct additional storm drainage detention and pumping facilities as needed to assure continued ability to discharge surface runoff into the various SCVWD facilities and San Francisco Bay. [Action Statement 3.4C.3d, p. (3.4)8]*
- *Review FEMA maps when they are updated every three to five years, and incorporate information on flood prone areas into future land use plans. [Action Statement 3.4C.3g, p. (3.4)8]*
- *Minimize the quantity of runoff and discharge of pollutants to the maximum extent practicable by integrating surface runoff controls into new development and redevelopment land use decisions. [Goal 3.4D, p. (3.4)8]*
- *Consider the impacts on the water quality of surface runoff as part of land use and development decisions, and implement BMPs to minimize the total volume and rate of runoff. [Policy 3.4D.1, p. (3.4)8]*
- *Assure that all applicable development projects (those disturbing five acres or greater of land) obtain coverage under the State Water Board’s general construction activity storm water NPDES permit, or under a similar Regional Board permit if one is adopted in the future. [Action Statement 3.4D.1b, p. (3.4)8]*

11.2.2 Santa Clara Valley Water District and Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Water District (SCVWD) owns and operates watercourses and manages groundwater supplies and reservoirs for the City. In addition, the SCVWD is the fiscal agent for the Santa Clara Valley Urban Runoff Pollution Prevention Program

(SCVURPPP). The program is run under a National Pollution Discharge Elimination System (NPDES) permit from the Regional Water Quality Control board (RWQCB), which defines the responsibilities of participants to control nonpoint source pollution, including the adoption and enforcement of local ordinances, control measures, and monitoring and inspections programs. The program began in 1986 when the County of Santa Clara, the SCVWD, and local jurisdictions joined together to comply with federal stormwater requirements of the RWQCB's *Water Quality Control Plan*. An NPDES permit for stormwater was adopted by the RWQCB for the SCVURPPP in June 1990. The permit requires the administrators of the program to plan and implement the following programs: elimination of illicit connections and illegal dumping, management of stormwater, identification and control of runoff from industrial dischargers' facilities, field testing of selected stormwater pollutant control measures, source control, toxicity control; characterization of urban transportation corridors, monitoring, and reporting.¹

In the northern Santa Clara Valley, storm drains flow directly to local creeks and San Francisco Bay, with no treatment necessitating the SCVURPPP. Some common sources of this pollution include spilled oil, fuel, and fluids from vehicles and heavy equipment; construction debris, including dirt; landscaping runoff containing pesticides or weed killers; yard and waste debris; and materials such as used motor oil, antifreeze, and paint products that people pour or spill into a street or storm drain. Thirteen valley cities have joined together with Santa Clara County and the SCVWD to educate local residents and business and to decrease storm drain pollution. Under the SCVURPPP, property owners and contractors share ultimate responsibility for the activities that occur on a construction site. Owners and contractors may be held responsible for any environmental damage caused by subcontractors or employees.²

The areawide municipal stormwater NPDES permit, under which the City of Sunnyvale is covered, also requires the SCVURPPP to implement an infiltration policy for Santa Clara Valley. The purposes of the infiltration policy include providing additional groundwater input, decreasing surface water runoff and peak flows, and reducing mass loading of pollutants to San Francisco Bay.³

The SCVWD is also responsible for flood control in the City. For over 30 years, the SCVWD has assumed responsibility for both water supply and flood management in Santa Clara County. About 70,000 homes and businesses in the valley could be flooded to some degree in a major flood. SCVWD, as the countywide flood control agency, is responsible for reducing or eliminating flooding. To accomplish that task, the district undertakes a wide variety of flood

¹Ibid., pp. III.4-7 and 8; and Kristy McCumby, Environmental Specialist, City of Sunnyvale Department of Public Works, written communication, March 14, 2003.

²Olson Cherry Orchard FEIR, p. III.4-8.

³Ibid.

protection projects. Typical solutions to flood hazards include floodplain zoning, maintaining existing facilities, levee and flood wall construction, or structural work in flood channels with rock, gabions, concrete, earth-lining, or other material.¹

11.2.3 San Francisco Bay Regional Water Quality Control Board

The project area is located within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). The RWQCB has issued a NPDES stormwater discharge general permit to the SCVURPPP, of which the City is a co-permittee. The RWQCB is responsible for the protection of beneficial uses of water resources within the San Francisco Bay Region. The RWQCB uses planning, permitting, and enforcement authorities to meet this responsibility, and has adopted the *Water Quality Control Plan (Basin Plan)* (latest edition 1995) to implement plans, policies, and provisions for water quality planning and management. The *Basin Plan* contains water quality objectives that are intended to protect the beneficial uses of the basin. The RWQCB has set water quality objectives for all surface waters in the region. Water quality objectives are also listed for groundwater.²

The RWQCB administers the NPDES stormwater-permitting program in the Bay Area. As of July 1, 2003, construction activities that create one acre or more of impervious surface are subject to the newly revised permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated With Construction Activity (General Construction Permit).³ Project owners submit a Notice of Intent (NOI) to the RWQCB to be covered by the General Permit prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared before construction begins, usually during the planning and design phases of a project. The plan must include specifications for Best Management Practices (BMPs) that would be implemented during project construction to control contamination of surface flows and the potential discharge of pollutants from the site. Additionally, the plan must describe measures to prevent or control pollutants in runoff after construction is complete, and identify a plan to inspect and maintain these measures. Implementation of the plan starts with the commencement of construction and continues through project completion. The SWPPP document itself remains on-site during construction. After completion of the project, the owners submit a Notice of Termination to the RWQCB to indicate that construction is completed.⁴

¹Ibid.

²Ibid., pp. III.4-8 and 9.

³*Municipal Storm Water Permit Revisions: Impacts to Cities and New Development Programs*, www.SCVURPPP.org, March 24, 2003.

⁴Olson Cherry Orchard FEIR, p. III.4-9.

The performance standards requiring BMPs are being significantly revised. As of July 1, 2003, new development and significant redevelopment projects that create one acre or more of impervious surface (Group 1 projects) are initially covered by the revised standards. On October 15, 2004, this threshold falls to 5,000 square feet of impervious surface (Group 2 projects).¹

The NPDES permit allows cities to propose their own "small project" definition that could replace the 5,000-square-foot standard, as long as the proposal is comparably effective to the 5,000-square-foot standard with respect to development area and/or pollutant loading.²

New development projects covered under the revised standards include both private development projects and public projects such as streets, roads, and parking lots. Significant redevelopment projects covered under the revised standards include major reworking of existing sites, and can include downtown redevelopment projects, but do not include regular maintenance (e.g., roof replacement, routine repaving, etc.) and interior remodels.³

Projects must incorporate source controls, design measures, and treatment controls to minimize storm water pollutant discharges. Where incorporating controls into a project is clearly impracticable--for example, at highly constrained downtown redevelopment sites--projects are allowed to satisfy their obligation elsewhere by implementing measures to provide an "equivalent water quality benefit." The permit allows cities to develop their own program to do this, subject to approval of the RWQCB. Alternately, projects may participate in regional solutions--such as storm water wetlands that treat runoff from a broad area--rather than providing on-site treatment controls.⁴

11.2.4 City of Sunnyvale Urban Runoff Management Plan

The City of Sunnyvale Urban Runoff Management Plan has been in place since 1997 and provides the guidance for performance standards, best management practices (BMPs), and standard operating procedures, as well as the legal authority for their implementation for the City departments that are involved in storm water pollution prevention. For example, there are sections related to planning procedures, construction inspections, public works maintenance, illicit connections, and illegal discharges.

¹www.SCVURPPP.org.

²Ibid.

³Ibid.

⁴Ibid.

11.3 IMPACTS AND MITIGATION MEASURES

11.3.1 Significance Criteria

Based on the CEQA Guidelines (2002 edition),¹ implementation of the proposed Downtown Improvement Program Update would be considered in this EIR to have a significant drainage or water quality impact if it or related project-facilitated development activities would:

- (a) violate any water quality standards or waste discharge requirements;
- (b) substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- (c) substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- (d) substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of amount of surface runoff in a manner which would result in flooding on- or off-site;
- (e) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- (f) otherwise substantially degrade water quality;
- (g) place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- (h) place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- (i) expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- (j) Expose people or structures to inundation by seiche, tsunami, or mudflow.

¹CEQA Guidelines (2002), Appendix G, item VIII.

11.3.2 Impacts and Mitigation Measures

Local Storm Drainage System Impacts. Project-facilitated development in the downtown area would be limited to areas that are already substantially developed; therefore, additional impervious surface and related storm water runoff due to project-facilitated development would be minimal. In addition, the project area has no significant storm drainage system storage or retention capacity deficiencies. The Sunnyvale Department of Public Works, Field Services Division, has concluded that higher future development intensity in downtown Sunnyvale will require upgrades to storm line segments in the project vicinity.¹

Associated local storm drainage system improvements may be required for specific future project-facilitated developments. City of Sunnyvale General Plan policies, codes, and ordinances already require adequate storm drainage improvements for all new development, subject to review and approval by the City (see section 11.2, Pertinent Plans and Policies, above). This potential impact is therefore considered to be ***less-than-significant***.

Mitigation. No significant storm drainage impact has been identified; no mitigation is required.

Impact 11-1: Erosion, Sedimentation, and Urban Runoff Pollutants. Surface water pollutants associated with project-facilitated additional development activity in the downtown area, including soil disturbance associated with grading activities during construction, urban pollutants generated from new impervious surfaces and increased vehicular use, and possible increases in herbicide, pesticide, and fertilizer use (for landscaping), could combine to significantly degrade the quality of San Francisco Bay receiving waters. This combination of factors represents a ***potentially significant impact*** (see criterion (a) under "Significance Criteria," subsection 11.3.1, above).

Project-facilitated additional urban development within the proposed project area could further degrade downstream water quality. In particular, grading activities required for new development could have short-term erosion and associated sedimentation impacts. In addition, urban debris and oil and grease that collect on new paved surfaces and are then washed into drainages could further impair runoff water quality and ultimately water quality in downstream receiving waters of San Francisco Bay. Increased uses of herbicides, pesticides, and fertilizers associated with new, project-facilitated development and related landscaping activities could also add to this contamination of receiving waters. New project-facilitated commercial operations could contaminate surface and groundwater if potential pollutants are spilled or disposed of improperly.

¹Craig, written communication, January 13, 2003.

Mitigation 11-1: Require the applicant for each future project-facilitated discretionary development to comply where applicable with all current state, regional, and City water quality provisions, and where required under adopted San Francisco Bay Regional Water Quality Control Board (RWQCB) regulations: (a) file with the RWQCB a *Notice of Intent* to comply with the Statewide General Permit for Construction Activities, (b) prepare and implement a project-specific Stormwater Pollution Prevention Plan (including an erosion control plan) if grading is involved, (c) implement a monitoring, inspection, and documentation program to assure the effectiveness of control measures, including post-construction measures, (d) obtain or comply with existing General Stormwater Discharge Permit(s) for Industrial Activities, where applicable, and (e) comply with the NPDES Phase II Non-Point Discharge program. Implementation of these requirements would reduce this impact to a ***less-than-significant level***.

Compliance with City and RWQCB provisions typically includes the following:

(i) *NPDES General Permit for Stormwater Discharge Associated with Construction Activity.* At the time of development of each subsequent project-facilitated private development or public improvement involving the grading of more than one acre (as of July 1, 2003), or of more than 5,000 square feet or the City's adopted "small project" definition (as of October 15, 2004), the applicant shall file a *Notice of Intent* with the RWQCB. All stormwater discharges must be mitigated in compliance with the City's NPDES permit.

(ii) *Stormwater Pollution Prevention Plan.* The applicant shall prepare and implement a *Stormwater Pollution Prevention Plan* (SWPPP) for review and approval prior to issuance of a grading permit. The NPDES General Permit and the permit-required SWPPP shall address both erosion and non-point source pollution impacts (e.g., improper handling or accidental spill of toxic materials) from project construction.

The SWPPP, at a minimum, shall follow all City ordinances (including the Urban Runoff Management Plan and current BMPs) and conform with the California *Storm Water Best Management Practices Handbook*, and shall include, but not be limited to, the following criteria:

- Immediately revegetate or otherwise protect all disturbed areas from both wind and water erosion upon the completion of grading activities.
- To the extent possible, schedule major site development work involving earth moving and excavation for the dry season (April 15 to October 15). If grading is to be conducted in winter, implement an approved erosion control plan prior to October 15th. Capture and deposit all runoff prior to discharge into project area drainages.

- Incorporate measures as necessary to protect project area drainages from sedimentation.
- Use water bars, temporary swales and culverts, mulch and jute netting, hydroseeding, silt fences and sediment traps where necessary to prevent surface water from eroding graded areas and to retain sediment.
- Water soils susceptible to wind erosion frequently during construction.

(iii) *Post-Construction Control Measures.*¹ The revised NPDES permit requires post-construction source controls to prevent the discharge of pollutants from new projects. Such controls have already been widely implemented across the Bay Area. Examples include, but are not limited to:

- indoor mat/equipment wash racks;
- sanitary sewer drains for swimming pool drains and covered areas of parking structures; and
- covered trash enclosures, fueling bays, and loading docks.

Under the revised NPDES permit, cities must review and, as appropriate, revise local design standards to reduce potential impacts. This process could include revising standards to reduce impervious surfaces, allow for new treatment controls, and reduce impacts to streams and wetlands. Examples of site design measures include, but are not limited to:

- roof downspouts leading to splash blocks or "bubble-ups";
- minimum-impact street design standards; and
- minimum-impact parking lot standards, including use of landscaping as a storm water drainage feature.

(iv) *Range of Possible Measures.* Since the objective of erosion control and water quality treatment measures is to reduce contaminant loading to the extent practicable with implementation of the best available technologies, the BMPs recommended above are not fixed. Over time, new BMPs and policies may be applied and adopted by the SCVURPPP, RWQCB, and the City of Sunnyvale.

¹www.SCVURPPP.org.

